Fig. 1

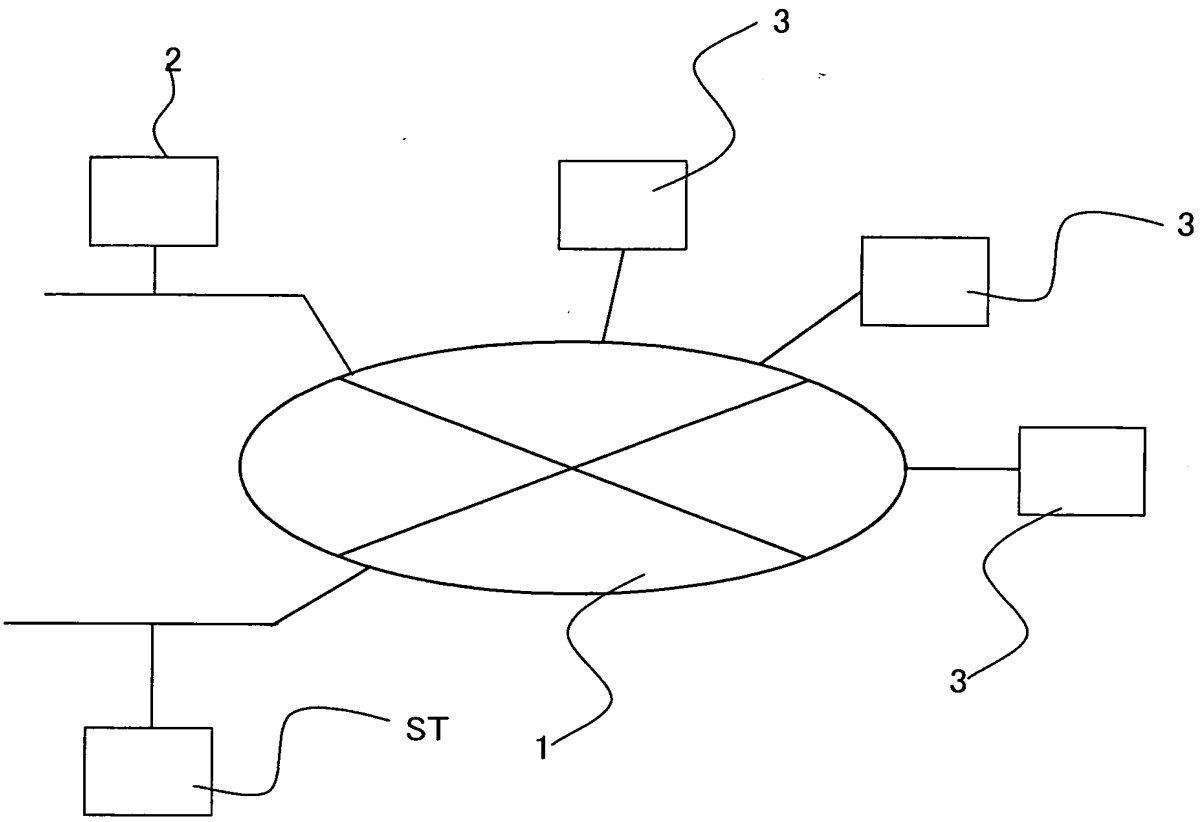


Fig. 2

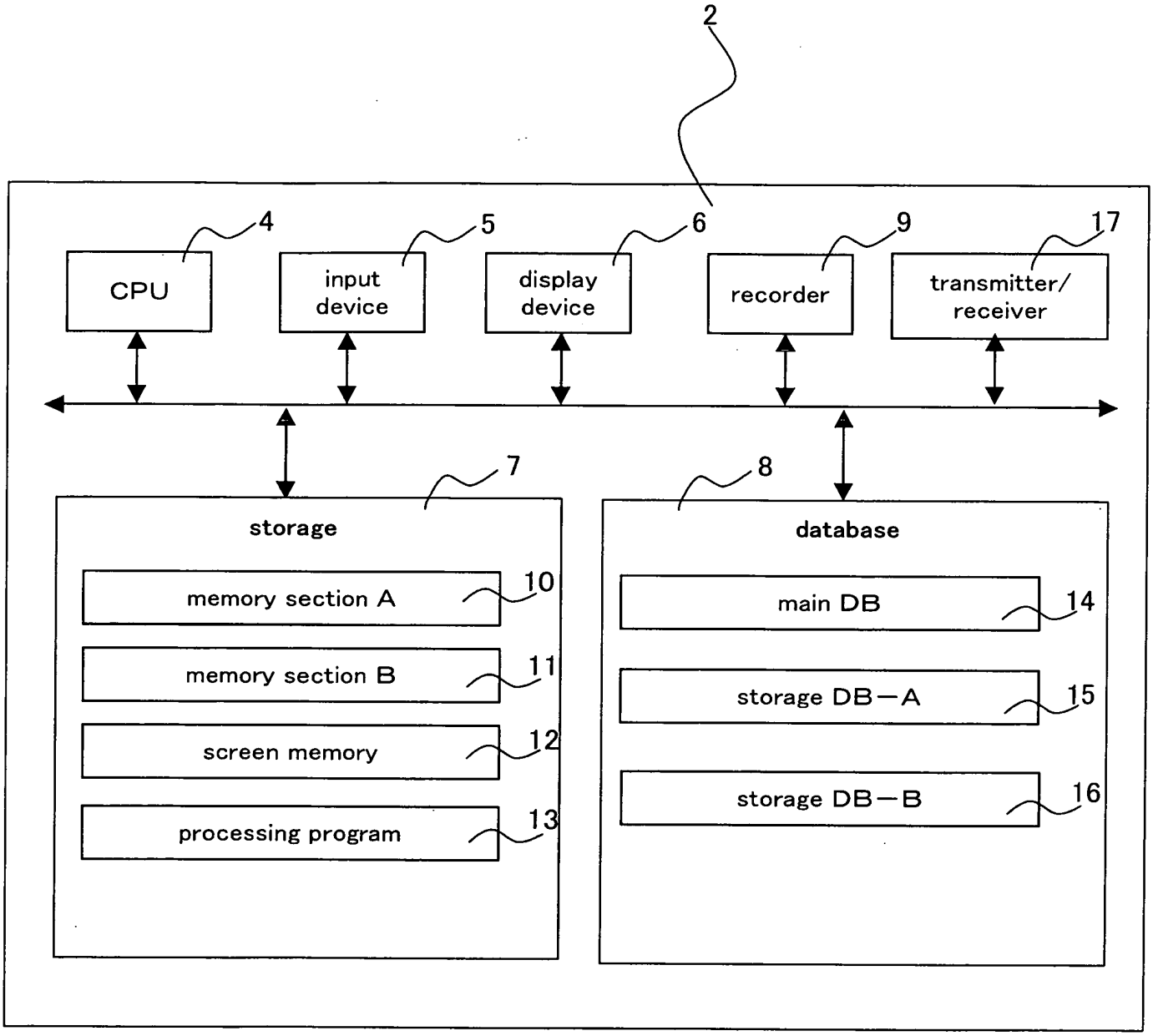

2
4
CPU
5
input device
6
display device
9
recorder
17
transmitter/ receiver
7
storage
memory section A
10
memory section B
11
screen memory
12
processing program
13
8
database
main DB
14
storage DB−A
15
storage DB−B
16

Fig. 3

Polymorphism address	....	Polymorphism classification	Polymorphism pattern	Classification (name of disease)	Annotative information on the polymorphism pattern (morbidity rate)	.....	Level of disclosure (disclosability)
123456	.....	SNP	Polymorphism 1	hypertension	a	.....	O
123456	.....	SNP	Polymorphism 2	hypertension	b	.....	O
123456	.....	SNP	Polymorphism 3	hypertension	c	.....	O
223456	.....	SNP	Polymorphism 1	large-bowel cancer	(i)	.....	O
223456	.....	SNP	Polymorphism 2	large-bowel cancer	(ii)	.....	O
223456	.....	SNP	Polymorphism 3	large-bowel cancer	(iii)	.....	O
234567	.....	SNP	Polymorphism 1	stomach cancer	d	.....	O
234567	.....	SNP	Polymorphism 2	stomach cancer	e	.....	O
234567	.....	SNP	Polymorphism 3	stomach cancer	f	.....	O
334567	.....	SNP	Polymorphism 1	asthma	(iv)	.....	O
334567	.....	SNP	Polymorphism 2	asthma	(v)	.....	O
334567	.....	SNP	Polymorphism 3	asthma	(vi)	.....	O
345678	.....	SNP	Polymorphism 1	diabetes	g	.....	O
345678	.....	SNP	Polymorphism 2	diabetes	h	.....	O
345678	.....	SNP	Polymorphism 3	diabetes	i	.....	O
445678	.....	SNP	Polymorphism 1	lung cancer	I	.....	O
445678	.....	SNP	Polymorphism 2	lung cancer	II	.....	O
445678	.....	SNP	Polymorphism 3	lung cancer	III	.....	O
456789	.....	SNP	Polymorphism 1	pollinosis	j	.....	O
456789	.....	SNP	Polymorphism 2	pollinosis	k	.....	O
456789	.....	SNP	Polymorphism 3	pollinosis	l	.....	O
456789	.....	SNP	Polymorphism 1	hypertension	m	.....	O
456789	.....	SNP	Polymorphism 2	hypertension	n	.....	O
456789	.....	SNP	Polymorphism 3	hypertension	o	.....	O
:	:	microsatellite	Polymorphism 1	immedicable disease	—	:	×
:	:	microsatellite	Polymorphism 2	immedicable disease	—	:	×
:	:	microsatellite	Polymorphism 3	immedicable disease	—	:	×
:	:	deletion	Polymorphism 1	:	:	:	O
:	:	deletion	Polymorphism 2	:	:	:	O
:	:	deletion	Polymorphism 3	:	:	:	O

Fig. 4

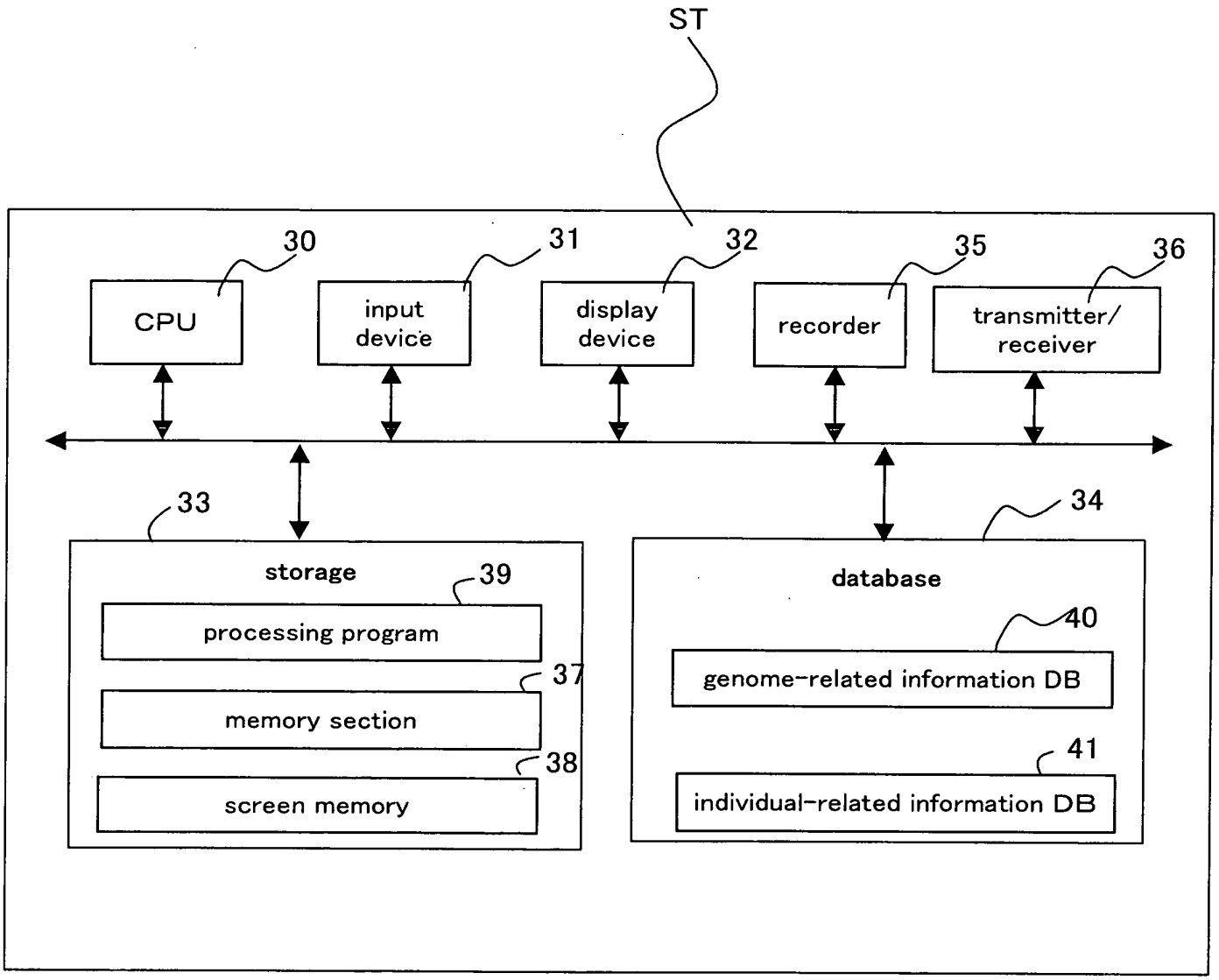

ST
30
31
32
35
36
CPU
input device
display device
recorder
transmitter/ receiver
33
34
storage
39
processing program
37
memory section
38
screen memory
database
40
genome-related information DB
41
individual-related information DB

Fig. 5

Polymorphism address	Reference No. A0001	Reference No. A0002	ReferenceNo. A0003	.....
000001	Polymorphism 2	Polymorphism 1	Polymorphism 3	.....
000002	Polymorphism 1	Polymorphism 1	Polymorphism 1	.....
:	:	:	:	:
123456	Polymorphism 3	Polymorphism 2	Polymorphism 2	.....
:	:	:	:	:
223456	Polymorphism 1	Polymorphism 3	Polymorphism 1	.....
:	:	:	:	:
234567	Polymorphism 1	Polymorphism 1	Polymorphism 1	.....
:	:	:	:	:
334567	Polymorphism 1	Polymorphism 2	Polymorphism 1	.....
:	:	:	:	:
345678	Polymorphism 1	Polymorphism 1	Polymorphism 1	.....
:	:	:	:	:
445678	Polymorphism 3	Polymorphism 2	Polymorphism 1	.....
:	:	:	:	:
456789	Polymorphism 1	Polymorphism 1	Polymorphism 1	.....
456790	Polymorphism 2	Polymorphism 2	Polymorphism 2	.....
456791	Polymorphism 1	Polymorphism 2	Polymorphism 1	.....
456792	Polymorphism 2	Polymorphism 2	Polymorphism 2	.....
:	:	:	:	:

Fig. 6

Individual-related information	Reference No. A0001	Reference No. A0002	Reference No. A0003	.....
Preference a	×	×	×	.....
Preferenceb	×	○	○	.....
Preference c	○	×	×	.....
Property ①	○	○	×	.....
Property ②	○	×	○	.....
Property ③	○	○	×	.....
:	:	:	:	:

Fig. 7

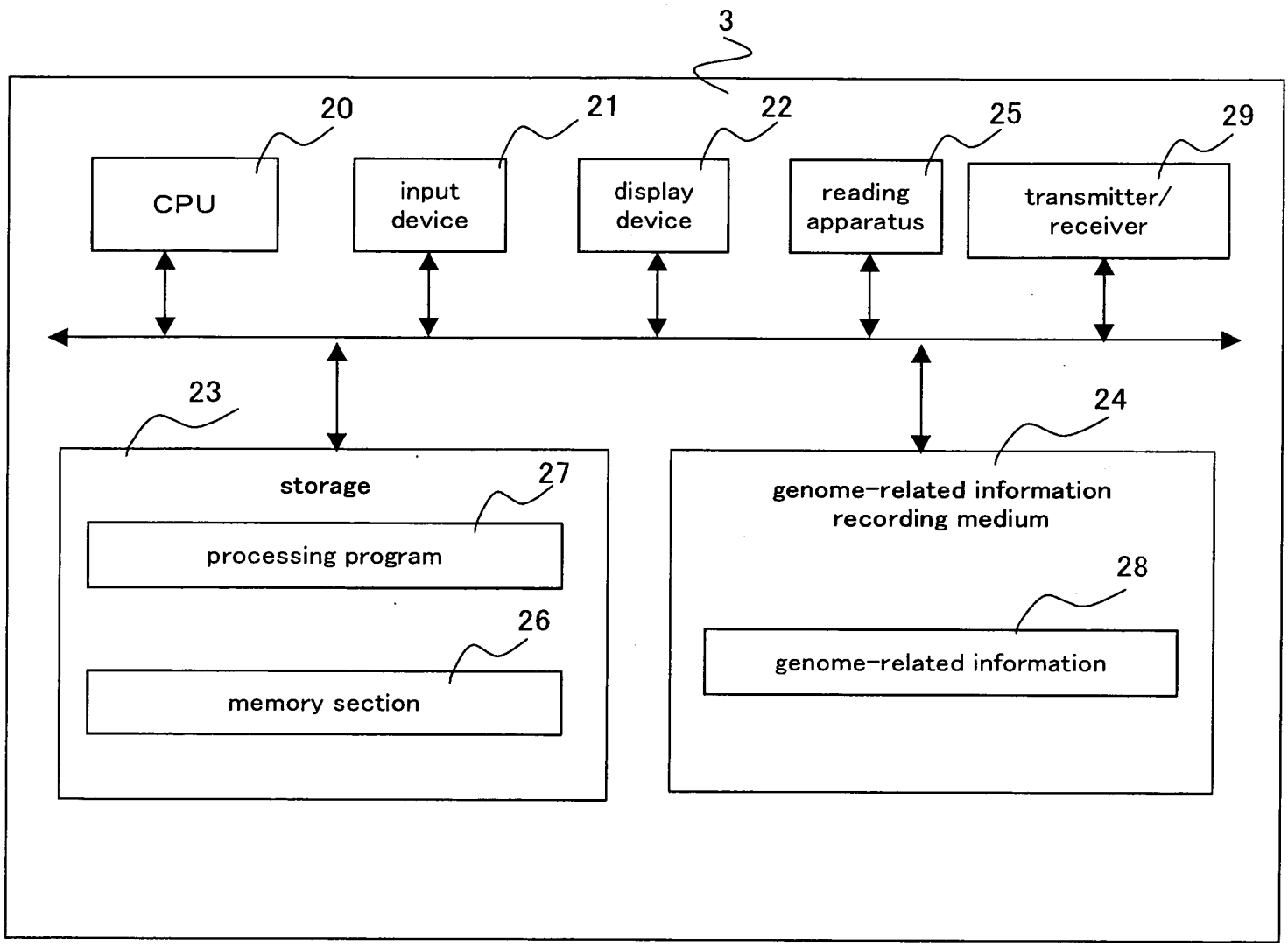

3
20
CPU
21
input device
22
display device
25
reading apparatus
29
transmitter/ receiver
23
storage
27
processing program
26
memory section
24
genome-related information recording medium
28
genome-related information

Fig. 8

I

Gno.	Date of birth
0001	**.**.****

II

Polymorphism address	Polymorphism pattern	Comment
000001	Polymorphism 1	.....
000002	Polymorphism 1	.....
:	:	:
123456	Polymorphism 2	.....
:	:	:
223456	Polymorphism 3	.....
:	:	:
234567	Polymorphism 1	.....
:	:	:
334567	Polymorphism 2	.....
:	:	:
345678	Polymorphism 1	.....
:	:	:
445678	Polymorphism 2	.....
:	:	:
456789	Polymorphism 1	.....
456790	Polymorphism 2	.....
456791	Polymorphism 2	.....
456792	Polymorphism 2	.....
:	:	:

III

Anamnesis
infantile asthma
gout
pollinosis
gastric ulcer
atopy
hypertension
diabetes

IV

Characteristics	Record
blood type	.....
body height	.....
body weight	.....
vision	.....
running ability	.....
psychological test	.....
:	:
:	:
:	:
:	:
:	:

V .....

..... (clinical record, etc.)
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Fig. 9

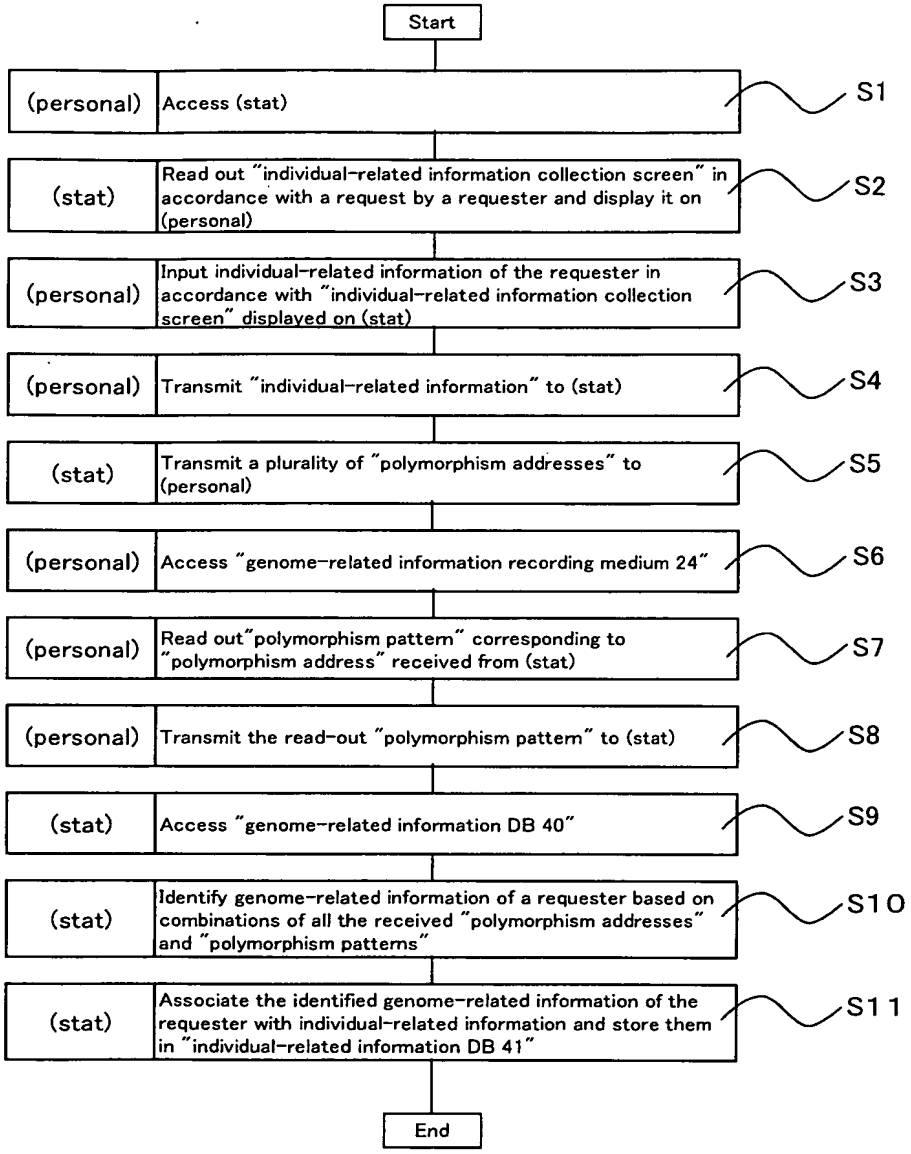

Start
(personal)
Access (stat)
S1
(stat)
Read out "individual-related information collection screen" in accordance with a request by a requester and display it on (personal)
S2
(personal)
Input individual-related information of the requester in accordance with "individual-related information collection screen" displayed on (stat)
S3
(personal)
Transmit "individual-related information" to (stat)
S4
(stat)
Transmit a plurality of "polymorphism addresses" to (personal)
S5
(personal)
Access "genome-related information recording medium 24"
S6
(personal)
Read out"polymorphism pattern" corresponding to "polymorphism address" received from (stat)
S7
(personal)
Transmit the read-out "polymorphism pattern" to (stat)
S8
(stat)
Access "genome-related information DB 40"
S9
(stat)
Identify genome-related information of a requester based on combinations of all the received "polymorphism addresses" and "polymorphism patterns"
S10
(stat)
Associate the identified genome-related information of the requester with individual-related information and store them in "individual-related information DB 41"
S11
End

Fig. 10

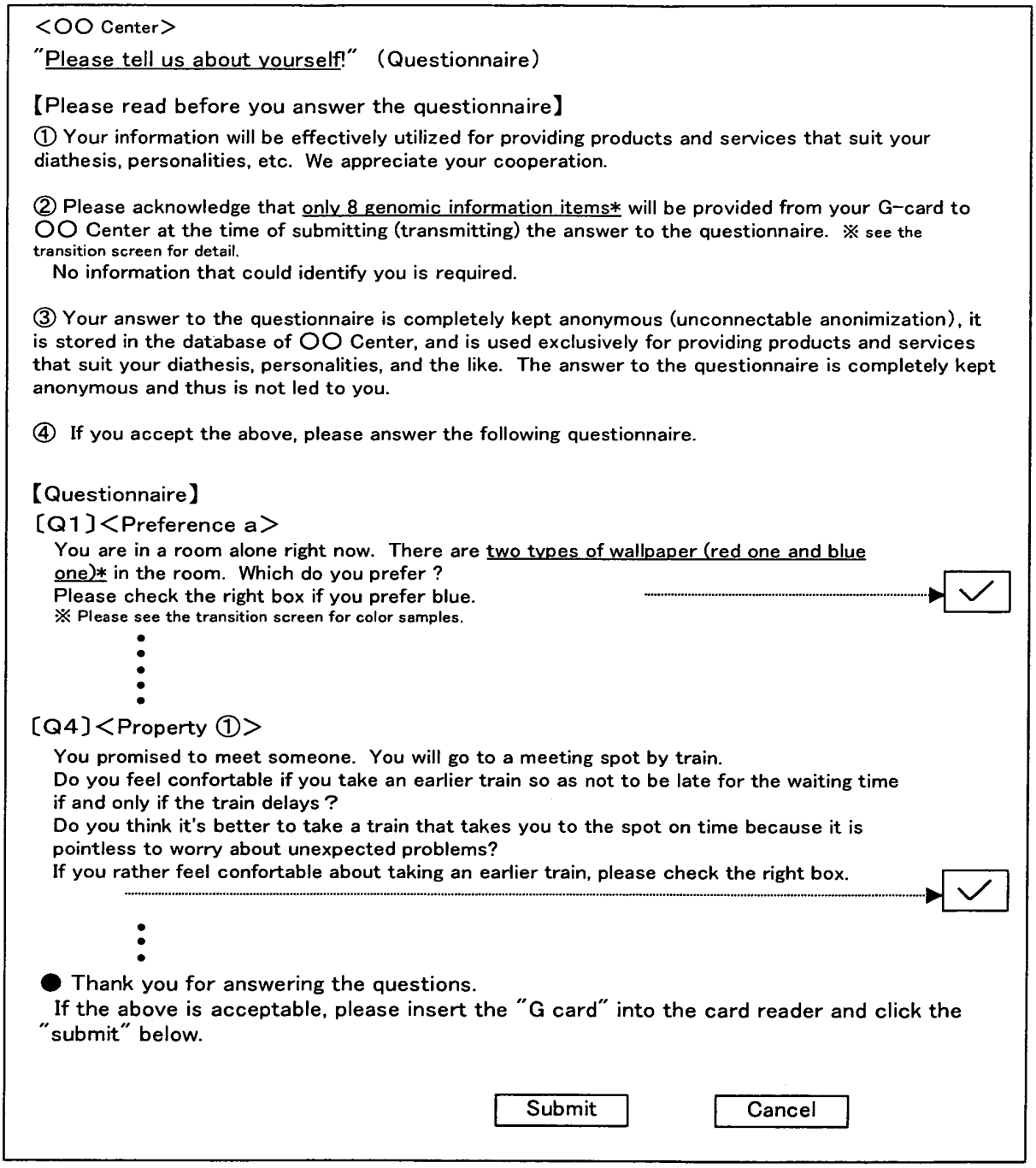

<OO Center>
"Please tell us about yourself!" (Questionnaire)
【Please read before you answer the questionnaire】
① Your information will be effectively utilized for providing products and services that suit your diathesis, personalities, etc. We appreciate your cooperation.
② Please acknowledge that only 8 genomic information items* will be provided from your G-card to OO Center at the time of submitting (transmitting) the answer to the questionnaire. ※ see the transition screen for detail.
No information that could identify you is required.
③ Your answer to the questionnaire is completely kept anonymous (unconnectable anonimization), it is stored in the database of OO Center, and is used exclusively for providing products and services that suit your diathesis, personalities, and the like. The answer to the questionnaire is completely kept anonymous and thus is not led to you.
④ If you accept the above, please answer the following questionnaire.
【Questionnaire】
[Q1]<Preference a>
You are in a room alone right now. There are two types of wallpaper (red one and blue one)* in the room. Which do you prefer ?
Please check the right box if you prefer blue.
※ Please see the transition screen for color samples.
[Q4]<Property ①>
You promised to meet someone. You will go to a meeting spot by train.
Do you feel confortable if you take an earlier train so as not to be late for the waiting time if and only if the train delays ?
Do you think it's better to take a train that takes you to the spot on time because it is pointless to worry about unexpected problems?
If you rather feel confortable about taking an earlier train, please check the right box.
● Thank you for answering the questions.
If the above is acceptable, please insert the "G card" into the card reader and click the "submit" below.
Submit
Cancel

Fig. 11

Polymorphism address	Polymorphism 1	Polymorphism 2	Polymorphism 3	Total
000001	50 people	25 people	25 people	100 people
000002	60 people	20 people	20 people	100 people
000003	40 people	40 people	20 people	100 people
000004	50 people	30 people	20 people	100 people
:	:	:	:	:

Fig. 12

	Preference a				Preference b				Preference c				.....
Polymorphism address	Polymorphism 1	Polymorphism 2	Polymorphism 3	Total	Polymorphism 1	Polymorphism 2	Polymorphism 3	Total	Polymorphism 1	Polymorphism 2	Polymorphism 3	Total	.....
000001	45 people	3 people	2 people	50 people	•• people	•• people	•• people	•• people	•• people	•• people	•• people	•• people	.....
000002	30 people	10 people	10 people	50 people	•• people	•• people	•• people	•• people	•• people	•• people	•• people	•• people	.....
000003	21 people	19 people	10 people	50 people	•• people	•• people	•• people	•• people	•• people	•• people	•• people	•• people	.....
000004	10 people	20 people	20 people	50 people	•• people	•• people	•• people	•• people	•• people	•• people	•• people	•• people	.....
:	:	:	:	:	:	:	:	:	:	:	:	:	:

10/535407

Fig. 13

	Preference a				Preference b				Preference c				.....
Polymorphism address	Polymorphism 1	Polymorphism 2	Polymorphism 3	Total	Polymorphism 1	Polymorphism 2	Polymorphism 3	Total	Polymorphism 1	Polymorphism 2	Polymorphism 3	Total	.....
000001	90%	12%	8%	50%	··%	··%	··%	··%	··%	··%	··%	··%	.....
000002	50%	50%	50%	50%	··%	··%	··%	··%	··%	··%	··%	··%	.....
000003	52.5%	47.5%	50%	50%	··%	··%	··%	··%	··%	··%	··%	··%	.....
000004	20%	66.7%	100%	50%	··%	··%	··%	··%	··%	··%	··%	··%	.....
:	:	:	:	:	:	:	:	:	:	:	:	:	:

10/535407

Fig. 14

	Preference a			Preference b			Preference c			.....
Polymorphism address	Polymorphism 1	Polymorphism 2	Polymorphism 3	Polymorphism 1	Polymorphism 2	Polymorphism 3	Polymorphism 1	Polymorphism 2	Polymorphism 3	.....
000001	11.25 times	1.5 times	1.0 times	·· times	·· times	·· times	·· times	·· times	·· times	.....
000002	1.0 times	1.0 times	1.0 times	·· times	·· times	·· times	·· times	·· times	·· times	.....
000003	1.11 times	1.0 times	1.05 times	·· times	·· times	·· times	·· times	·· times	·· times	.....
000004	1.0 times	3.34 times	5.0 times	·· times	·· times	·· times	·· times	·· times	·· times	.....
:	:	:	:	:	:	:	:	:	:	:

10/535407

Fig. 15

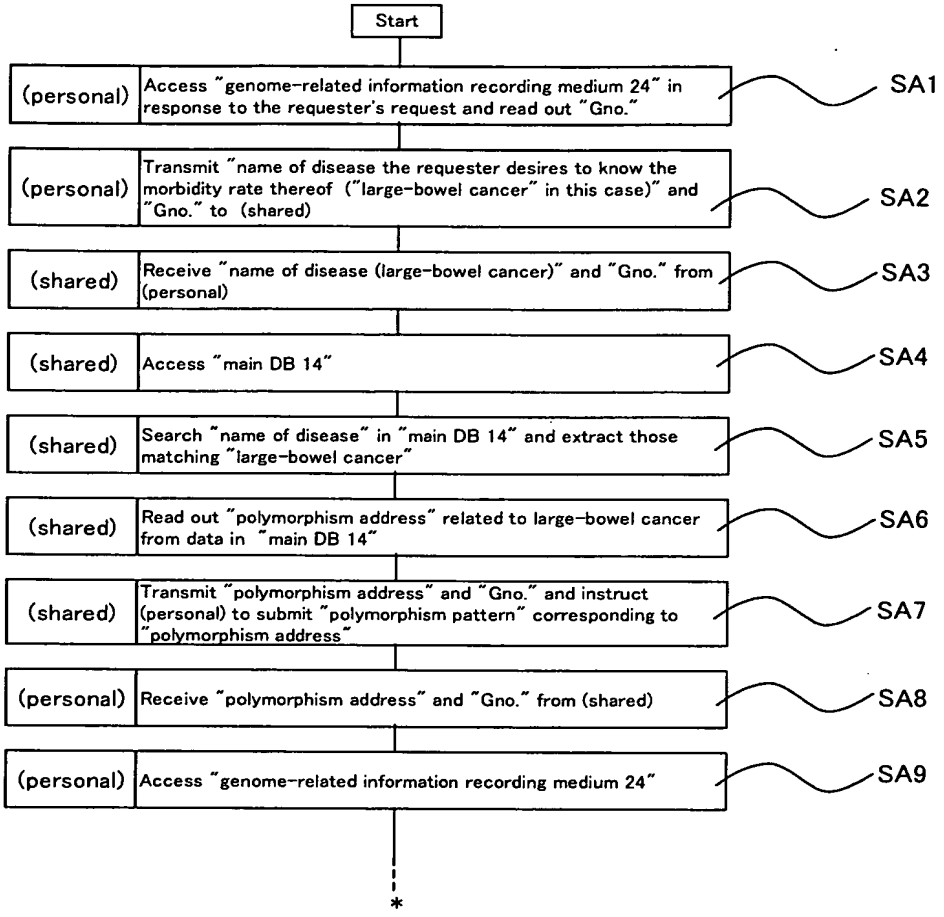

Start
(personal)
Access "genome-related information recording medium 24" in response to the requester's request and read out "Gno."
SA1
(personal)
Transmit "name of disease the requester desires to know the morbidity rate thereof ("large-bowel cancer" in this case)" and "Gno." to (shared)
SA2
(shared)
Receive "name of disease (large-bowel cancer)" and "Gno." from (personal)
SA3
(shared)
Access "main DB 14"
SA4
(shared)
Search "name of disease" in "main DB 14" and extract those matching "large-bowel cancer"
SA5
(shared)
Read out "polymorphism address" related to large-bowel cancer from data in "main DB 14"
SA6
(shared)
Transmit "polymorphism address" and "Gno." and instruct (personal) to submit "polymorphism pattern" corresponding to "polymorphism address"
SA7
(personal)
Receive "polymorphism address" and "Gno." from (shared)
SA8
(personal)
Access "genome-related information recording medium 24"
SA9
*

Fig. 16

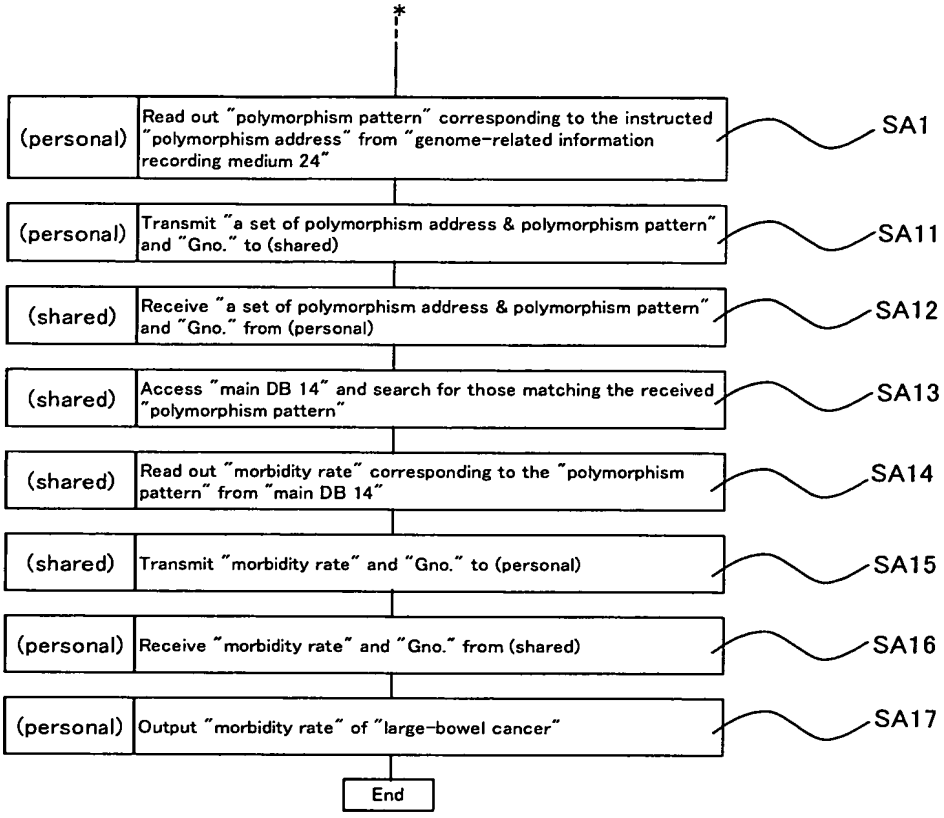

*
(personal)
Read out "polymorphism pattern" corresponding to the instructed "polymorphism address" from "genome-related information recording medium 24"
SA1
(personal)
Transmit "a set of polymorphism address & polymorphism pattern" and "Gno." to (shared)
SA11
(shared)
Receive "a set of polymorphism address & polymorphism pattern" and "Gno." from (personal)
SA12
(shared)
Access "main DB 14" and search for those matching the received "polymorphism pattern"
SA13
(shared)
Read out "morbidity rate" corresponding to the "polymorphism pattern" from "main DB 14"
SA14
(shared)
Transmit "morbidity rate" and "Gno." to (personal)
SA15
(personal)
Receive "morbidity rate" and "Gno." from (shared)
SA16
(personal)
Output "morbidity rate" of "large-bowel cancer"
SA17
End

Fig. 17

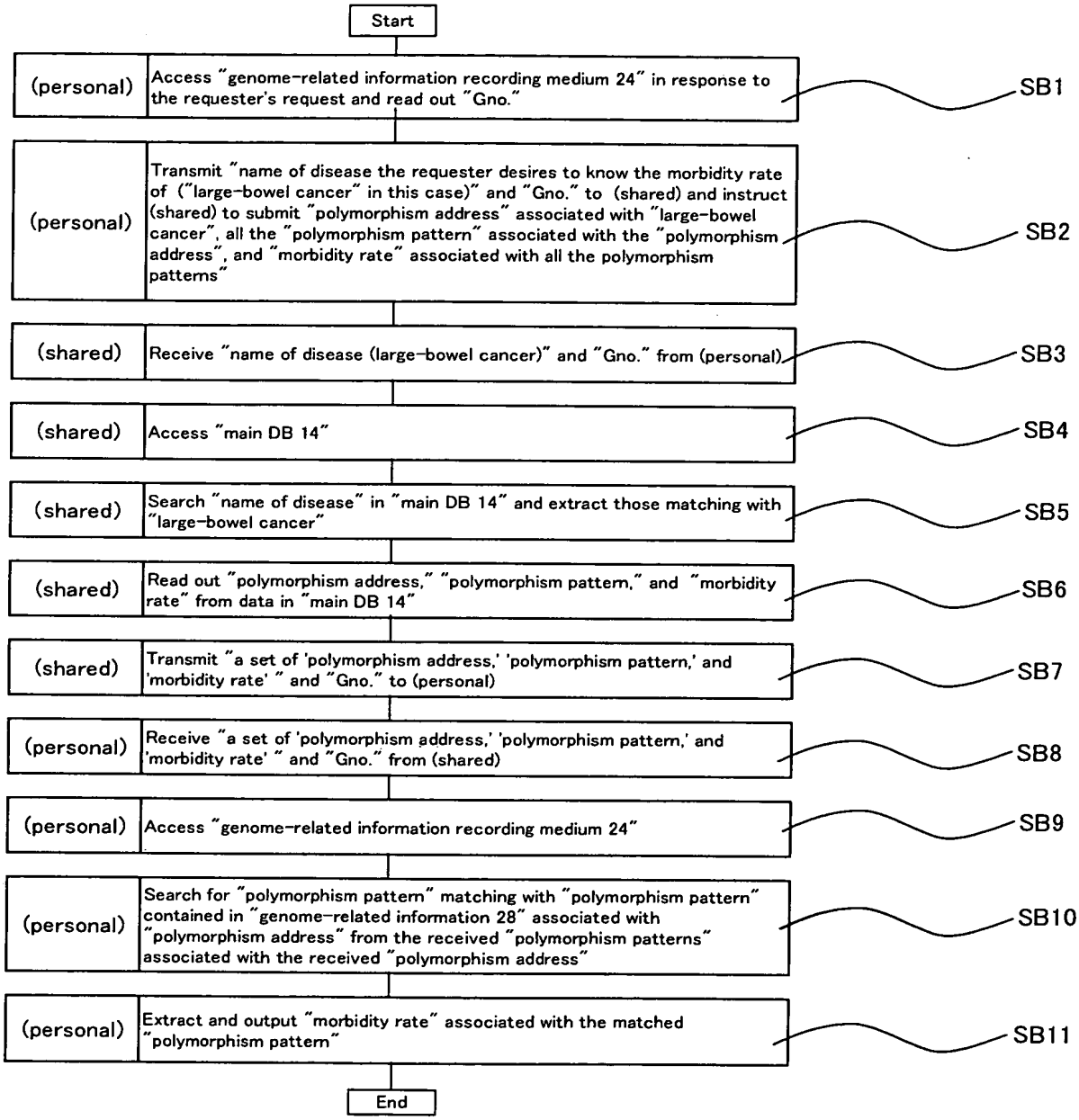
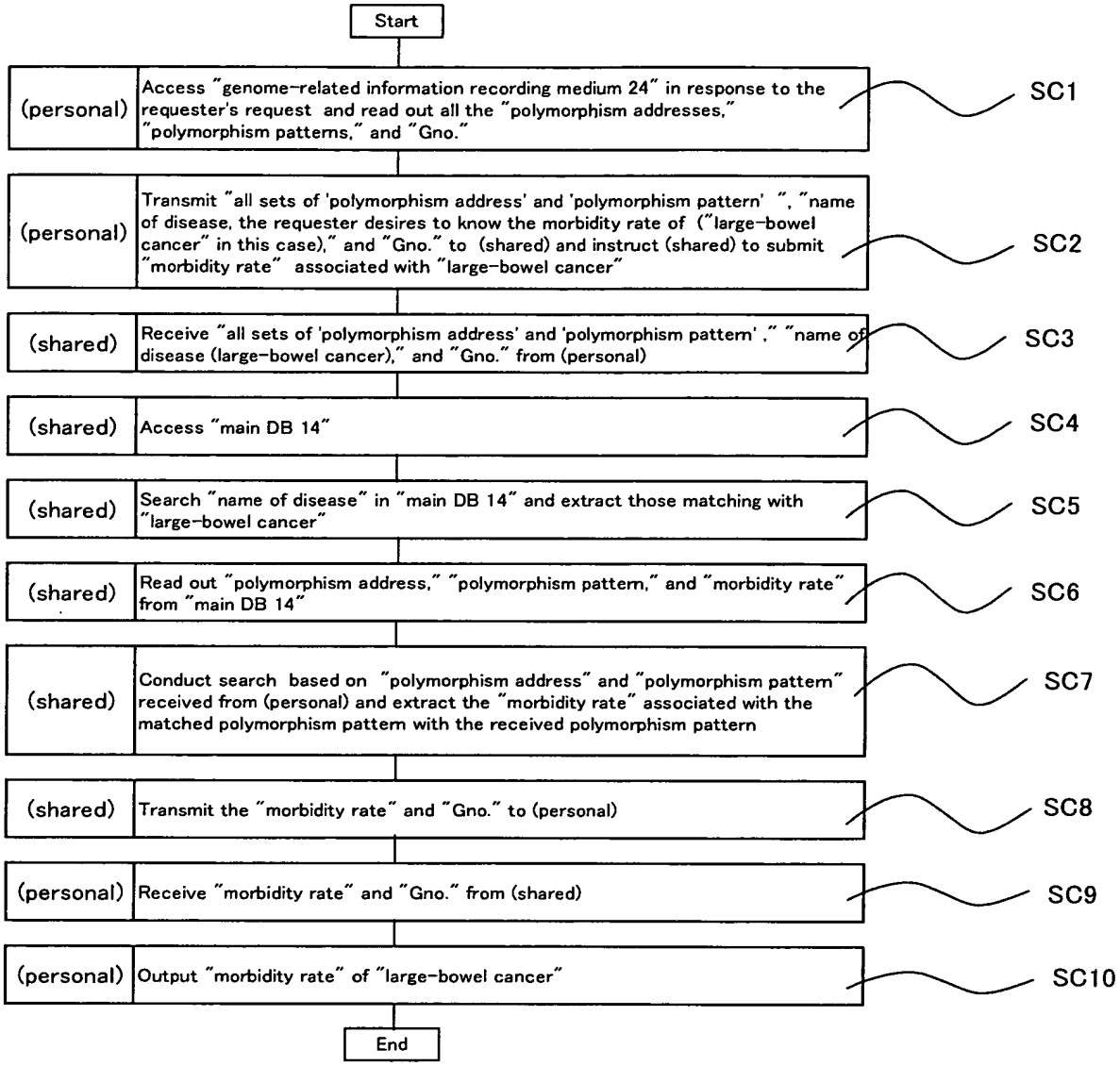

Start
(personal)
Access "genome-related information recording medium 24" in response to the requester's request and read out "Gno."
SB1
(personal)
Transmit "name of disease the requester desires to know the morbidity rate of ("large-bowel cancer" in this case)" and "Gno." to (shared) and instruct (shared) to submit "polymorphism address" associated with "large-bowel cancer", all the "polymorphism pattern" associated with the "polymorphism address", and "morbidity rate" associated with all the polymorphism patterns"
SB2
(shared)
Receive "name of disease (large-bowel cancer)" and "Gno." from (personal)
SB3
(shared)
Access "main DB 14"
SB4
(shared)
Search "name of disease" in "main DB 14" and extract those matching with "large-bowel cancer"
SB5
(shared)
Read out "polymorphism address," "polymorphism pattern," and "morbidity rate" from data in "main DB 14"
SB6
(shared)
Transmit "a set of 'polymorphism address,' 'polymorphism pattern,' and 'morbidity rate' " and "Gno." to (personal)
SB7
(personal)
Receive "a set of 'polymorphism address,' 'polymorphism pattern,' and 'morbidity rate' " and "Gno." from (shared)
SB8
(personal)
Access "genome-related information recording medium 24"
SB9
(personal)
Search for "polymorphism pattern" matching with "polymorphism pattern" contained in "genome-related information 28" associated with "polymorphism address" from the received "polymorphism patterns" associated with the received "polymorphism address"
SB10
(personal)
Extract and output "morbidity rate" associated with the matched "polymorphism pattern"
SB11
End

Fig. 18


Start
(personal)
Access "genome-related information recording medium 24" in response to the requester's request and read out all the "polymorphism addresses," "polymorphism patterns," and "Gno."
SC1
(personal)
Transmit "all sets of 'polymorphism address' and 'polymorphism pattern' ", "name of disease, the requester desires to know the morbidity rate of ("large-bowel cancer" in this case)," and "Gno." to (shared) and instruct (shared) to submit "morbidity rate" associated with "large-bowel cancer"
SC2
(shared)
Receive "all sets of 'polymorphism address' and 'polymorphism pattern'," "name of disease (large-bowel cancer)," and "Gno." from (personal)
SC3
(shared)
Access "main DB 14"
SC4
(shared)
Search "name of disease" in "main DB 14" and extract those matching with "large-bowel cancer"
SC5
(shared)
Read out "polymorphism address," "polymorphism pattern," and "morbidity rate" from "main DB 14"
SC6
(shared)
Conduct search based on "polymorphism address" and "polymorphism pattern" received from (personal) and extract the "morbidity rate" associated with the matched polymorphism pattern with the received polymorphism pattern
SC7
(shared)
Transmit the "morbidity rate" and "Gno." to (personal)
SC8
(personal)
Receive "morbidity rate" and "Gno." from (shared)
SC9
(personal)
Output "morbidity rate" of "large-bowel cancer"
SC10
End